

CLAIMS

1. A hydraulic drive control device of a construction machine comprising an engine (21) and a hydraulic pump (31) for a work machine that is driven by said engine, said device comprising:

an operation state detector (11, 12) for detecting an operation state of said work machine; and

a controller (10, 20) for receiving a signal from said operation state detector and controlling said engine and said hydraulic pump for said work machine, wherein

said controller (10, 20)

receives the signal from said operation state detector and identifies an operation mode performed with respect to said work machine (S1);

determines an engine output torque control line and a pump torque control line having a desired matching point according to said identified operation mode so that different engine output torque control lines and different pump torque control lines are designated for different operation modes (S2);

controls an output torque of said engine based on said determined engine output torque control line (S6); and

controls an absorption torque of said hydraulic pump for said work machine based on said determined pump torque control line.

2. The hydraulic drive control device of a construction machine according to claim 1, wherein

said controller (10, 20) determines said engine output torque control line and said pump torque control line so that an engine revolution speed at a matching point of said determined engine output torque control line and said determined pump torque control line assumes a substantially constant predetermined value for any identified operation mode, when said identified operation mode corresponds to any of a plurality of predetermined operation modes.

3. The hydraulic drive control device of a construction machine according to claim 1, wherein

said controller (10, 20) determines said engine output torque control line and said pump torque control line so that a torque at a matching point of said determined engine output torque control line and said determined pump torque control line assumes a substantially constant predetermined value for any identified operation mode, when said identified operation

mode corresponds to any of a plurality of predetermined operation modes.

4. The hydraulic drive control device of a construction machine according to claim 1, wherein
said controller (10, 20)
determines a pump absorption horsepower
according to said identified operation mode so that
different pump absorption horsepower is designated for
different operation modes (S2), and
controls the output torque of said engine by
using an equal horsepower line of said determined pump
absorption horsepower as said engine output torque
control line.

5. The hydraulic drive control device of a construction machine according to claim 1, further comprising
a hydraulic pump (41) for an auxiliary machine,
which is driven by said engine and serves to drive said
auxiliary machine of said construction machine, wherein
said controller (10, 20)
determines an absorption horsepower of said
hydraulic pump for said work machine that is to be
absorbed by said hydraulic pump for said work machine,
according to said identified operation mode so that

different absorption horsepower of said hydraulic pump for said work machine is designated for different operation modes (S2);

detects a predetermined state value relating to an operation of said auxiliary machine (S3) and determines an absorption horsepower of said hydraulic pump for said auxiliary machine that is to be absorbed by said hydraulic pump for said auxiliary machine, according to said detected state value (S4); and

controls said engine so that an output horsepower of said engine becomes a sum of said determined absorption horsepower of the pump for the work machine and said determined absorption horsepower of said hydraulic pump for said auxiliary machine.

6. The hydraulic drive control device of a construction machine according to claim 5, wherein

said controller (10, 20)

controls said hydraulic pump for said work machine so that the absorption torque of said hydraulic pump for said work machine follows said determined pump torque control line; and

determines a target revolution speed of said auxiliary machine according to said detected state value and controls a capacity of said hydraulic pump for said

auxiliary machine so that said auxiliary machine can be driven at said determined target revolution speed.

7. A method for controlling hydraulic drive of a construction machine comprising an engine (21) and a hydraulic pump (31) for a work machine that is driven by said engine, said method comprising:

a step (S1) of identifying an operation mode performed with respect to said work machine;

a step (S2) of determining an engine output torque control line and a pump torque control line having a desired matching point according to said identified operation mode so that different engine output torque control lines and different pump torque control lines are designated for different operation modes;

a step (S6) of controlling an output torque of said engine based on said determined engine output torque control line; and

a step (S7) of controlling an absorption torque of said hydraulic pump for said work machine based on said determined pump torque control line.